



FACT SHEET

Four County Landfill cleanup site Five Year Review September 26, 2006

Introduction

IDEM is conducting a five year review of the final remedial action for the Four County Landfill cleanup site. The Four County Landfill operated as a hazardous waste landfill from 1972 to 1989. The site occupies roughly 61 acres 0.7 mile southwest of Delong, in Fulton County. Tests on water samples taken from monitoring wells installed at the site confirmed volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and metals in ground water under the site. VOCs also were detected above maximum levels allowed by the federal Safe Drinking Water act in a plume of ground water flowing northeast from the landfill's northern boundary.

To speed further investigation and cleanup, in 1995 IDEM divided the site into two "operable units," known as OU1 and OU2. OU1 initially included the landfill site and was later expanded to include impacted soil adjacent to the western boundary of the landfill. Remedial action for OU1 was decided in 1998, and includes the landfill cap, leachate collection and treatment, gas venting, engineering controls and on-site and off-site ground water monitoring.

OU2 is the area near the landfill site where off-site contamination has impacted ground water. The remedial action for OU2 is Monitored Natural Attenuation. Monitored Natural Attenuation is the treatment of contaminated water through natural physical, chemical and biological processes. Components of the remedial action include: ground water monitoring to ensure continued protection of the public health; measures to verify the natural remediation processes; a contingency plan in case progress is not made through Monitored Natural Attenuation; plans for addressing potential impacts to private drinking water wells; and ground water use and deed restrictions.

Remedial action for OU2 was decided in 2001 and, combined with the remedial action for OU1, constitutes the final remedial action for addressing both actual and potential future impacts at the site.

The purpose of the five year review

Because cleanup activities have been conducted at the site but contaminants remain, federal law requires IDEM to conduct a five year review. The review addresses these issues:

- Whether the remedial action is functioning as intended;
- Whether the data used in the selection of the final remedial action and cleanup objectives remain valid; and
- Whether new information exists today that would cause us to question the protectiveness of the selected remedial action.

The five year review process

In conducting the five year review, IDEM staff will review cleanup standards, remedial actions for OU1 and OU2, data collected to date, and observations made during past site visits. Additional site visits may be conducted, as required. Staff will provide the public with past and current information about the remedial action and invite public input. IDEM will prepare a report about the five year review for public review.

Public participation opportunities

Community members are invited to participate in any or all of the following public participation opportunities:

- Attend the IDEM Public Availability Session. IDEM staff will be available from 1-3 p.m. and 4-6 p.m. on Tuesday, September 26, 2006, at the Aubbeenaubee Community Building, 7171 West Olsen Road, Leiter's Ford, Indiana.
- Submit written comments using the blank comment sheet found at the back of this fact sheet. Detach it, complete it, and drop it off at the IDEM Public Availability Session or mail it to the address printed on the sheet. Written comments must be received by Thursday, October 26, 2006.
- Submit oral comments by speaking with an IDEM staff member. At your request, IDEM staff at the public availability session will write down any comments you wish to submit.
- Take part in a formal interview with IDEM staff. With your permission, an IDEM staff member may interview you about the remedial action plan, how well you think IDEM has communicated with community members, and how we could improve communications.

About the final remedial action for Four County Landfill

The final remedial action for the Four County Landfill site includes the remedial action for the two "operable units," OU1 and OU2. IDEM and a trustee for the Four County Landfill Trust Fund, established in 2003, currently oversee landfill operation and maintenance activities and actions to address soil and ground water impacts. With the services of Keramida Environmental, they have replaced a leachate storage tank, conducted building cleanup and repair, purchased a small office trailer, conducted weekly landfill cover inspections, conducted weekly leachate pumping and disposal, conducted as needed seeding and cap repair, maintained equipment, and conducted reporting. Figures 1 and 2 show leachate disposal since 1994. The sharp volume drop between 1999 and 2000 tells us that the cap constructed in 1999 succeeded in reducing leachate production by preventing infiltration of liquid into the landfill.

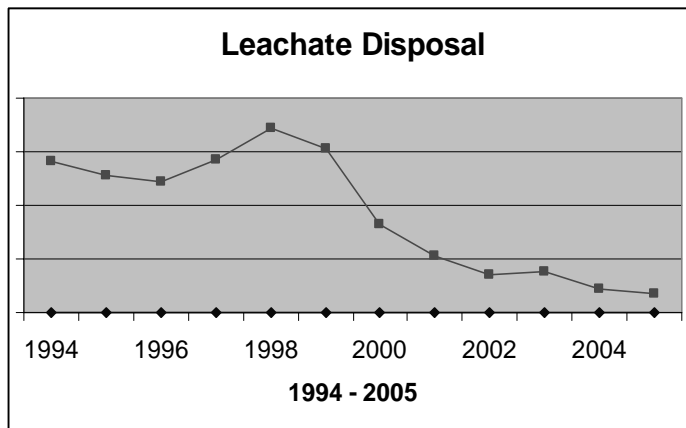


Figure 1

Year	Gallons
1994	564,700
1995	510,550
1996	490,350
1997	572,750
1998	690,594
1999	613,730
2000	329,478
2001	210,000
2002	140,800
2003	154,932
2004	88,796
2005	72,480

Figure 2

OU2 is the area near the landfill site where off-site contamination has impacted ground water. The remedial action for OU2 is Monitored Natural Attenuation. Monitored Natural Attenuation is the treatment of contaminated water through natural physical, chemical and biological processes. Components of the remedial action for OU2 include:

- A system for monitoring the location and levels of ground water contaminants;
- A plan for verifying the progress of the natural remediation processes;
- A contingency plan in case progress is not made through Monitored Natural Attenuation;
- The installation of point-of-use filters at residences that show site related contaminants in their drinking water;
- Ground water use restrictions; and
- Deed restrictions.

Following are the components of a performance monitoring, assessment and sentry monitoring system in the remedial action for OU2.

- A network of wells installed in 1999 for long-term ground water monitoring and new monitoring wells installed off-site in June of 2004 used for monitoring levels of contaminants and potential changes in the location of contaminants.
- Quarterly sampling to monitor for Monitored Natural Attenuation progress. Data suggest that contaminants are decreasing through the natural process referred to as Natural Attenuation. Analysis of quarterly samples for volatile organic compounds (VOCs) and other parameters that indicate progress began in 2004. After three years of quarterly monitoring, IDEM will evaluate the progress of Monitored Natural Attenuation.
- Routine quarterly sampling for VOCs is conducted at private wells. A single sampling event was conducted on nine private wells in 2004 when the additional off-site ground water monitoring wells were installed. IDEM has continued sampling at two homes and a church originally sampled by a group of potentially responsible parties. Since 2004, sampling has also been conducted at three residences drawing water from the deeper aquifer near Monitoring Well 125 where samples show an impact to the intermediate aquifer, and one residence drawing water from a deeper aquifer near Monitoring Well 130 where samples show an impact to the deeper aquifer. The owner of the home near

Monitoring Well 130 declined to give IDEM permission to install a sentry well, wishing to remain on quarterly sampling.

Ground water monitoring wells are located in two aquifers. The enclosed drawings for Unit B and Unit C show the locations of monitoring wells and where contamination has been detected above the Maximum Contaminant Levels (MCL) established by the Safe Drinking Water Act. Unit B is the intermediate aquifer at a depth of approximately 60-90 feet below ground surface. Unit C is a deeper aquifer at a depth of approximately 100-120 feet below ground surface. Data collected as part of this monitoring program are available for public review on the Web at <http://fourcounty.urs-eprojects.com>. Log in as a "guest" to view documents, reports and data.

More Information

Public documents for the Four County Landfill cleanup site are available for public review at these locations:

Information Repository
Fulton County Library
Aubbee Branch
4562 North 750 West
Leiter's Ford, Indiana 46945

IDEM central public file room
Indiana Government Center North
Room N-1255
100 North Senate Avenue
Indianapolis, IN 46204

Visit <http://fourcounty.urs-eprojects.com> and log in as a "guest" to view documents, reports and data collected as part of the monitoring program for OU2.

Four County Landfill Five Year Review Comment Sheet: Please use this sheet to submit written comments or share concerns with IDEM. Bring it to the Public Availability Session or mail it to IDEM. IDEM's mailing address is printed for you on the other side. To mail it, detach and fold it where marked, seal it with tape and add a stamp. Thank you.

- **Check here if you would like to be interviewed for the five year review** (please provide your contact information below).

Please use this space to write any concerns or comments (use additional sheets, if necessary).

How do you prefer to receive information from IDEM about the site (circle one)?

Mail Meetings Internet Newspaper Other

How do you think IDEM could communicate better (use additional sheets, if necessary)?

Please provide your contact information if you would like us to contact you:

Name: _____

Address: _____

City: _____ State: _____ ZIP: _____

Phone: (____) _____ E-mail: _____

Please
place
stamp
here

Pat Likins
Indiana Department of Environmental Management
Office of Land Quality
MC 66-30 IGCN 11
100 North Senate Avenue
Indianapolis, IN 46204-2251

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Chronology of Site Events

1972	Landfill began accepting municipal waste. Wastes were dumped in un-lined pits and covered.
1973	Indiana State Board of Health (ISBH) issued notice to stop dumping barrels of waste solvent on site.
1978	Environmental Waste Control (EWC) formed to operate landfill. ISBH approved landfill to accept industrial wastes including plating sludge, asbestos and liquid waste.
1980	EWC submitted Part A of a Resource Conservation and Recovery Act (RCRA) permit to dispose of hazardous waste. Landfill accorded interim status under RCRA.
1982-1986	Repeated violations of RCRA noted.
October 1986	IDEM referred site to U.S. EPA.
1986	Citizens formed Supporters to Oppose Pollution (STOP) to petition for closure of landfill.
1986-1987	Three lined landfill cells constructed for hazardous waste disposal. Some older waste deposits excavated and placed into the lined cells.
June 1987	U.S. EPA determined site had released hazardous substances.
1988	Civil suit filed United States v. EWC for violations under RCRA. STOP later joined the lawsuit.
March 1989	Federal District Court of Northern Indiana ordered landfill closed, assessed fines of \$2.78 million against EWC and ordered EWC to pay reasonable attorney fees incurred by STOP. EWC hired contractor to comply with court order.
1991	Closure work stopped due to financial difficulties and eventual bankruptcy of landfill owners. Site investigations found ground water under the site contaminated with VOCs, Semi-Volatile Organic Compounds (SVOCs), and metals.
November 1991	IDEM hired contractor to conduct operation and maintenance, collect and dispose of leachate and conduct maintenance at the site.
August 13, 1993	An Agreed Order between IDEM and a group of PRPs for a remedial investigation and feasibility study (RI/FS) was effective. PRPs prepared a work plan and took over operation and maintenance (O&M), including leachate management.
1995	Site divided into two operable units (OUs).
February 1995	IDEM issued a fact sheet to explain OU approach to site cleanup and discuss ongoing activities. Public meeting held on March 8, 1995.
September 1997	OU1 remedial investigation completed.
February 1998	Approved feasibility study report submitted; a pre-design investigation was completed during the OU1 RI/FS, and; a Remedial Design (RD) was prepared.
April 1998	IDEM issued a fact sheet for the proposed plan for OU1. Public meeting held May 6 1998. Public comment period April 17 - May 17.
July 16,	OU1 record of decision (ROD) signed.

1998	
November 7, 1998	An Agreed Order was signed for the remedial design and remedial action for OU1.
May 1999	IDEM issued a fact sheet to announce construction of OU1.
December 1999	OU1 construction completed, long-term ground water monitoring plan (LTGWMP) approved.
May 2000	OU2 remedial investigation report approved, OU2 feasibility study report submitted.
November 16, 2000	OU2 feasibility study completed.
October 2000	First round of quarterly long term ground water monitoring plan (LTGWMP) samples collected.
January 2000	IDEM issued fact sheet post operable unit one (OU1) construction. IDEM public availability session held February 12, 2000.
January 4, 2001	IDEM approved feasibility study for OU2.
January 2001	Remedial action alternatives released for public comment in IDEM fact sheet titled: <u>Fact Sheet, Four County Landfill State Cleanup Site, DeLong, Fulton County, Indiana, Operable Unit Two (OU2) Proposed Plan, January 2001</u> . Public meeting January 17, 2001. Public comment period January 8 through February 7, 2001.
July 16, 2001	OU2 record of decision (ROD) signed.
April 2003	PRPs performed last sampling event for LTGWMP.
May 30, 2003	Trust agreement entered into between Deborah Albright, Trustee, and the Four County Site Respondent Group.
June 2, 2003	IDEM entered into an Agreed Order with PRPs to pay past costs and fund remedial action. The group of PRPs paid past costs and placed \$320,000 in the newly established Four County Landfill trust fund for future work. The group of PRPs agreed to make no claims to the EWC Closure/Post Closure Trust Fund until IDEM certifies all work has been completed.
October 8, 2003	IDEM staff and trustee provided site status report to Fulton County Hazardous Substance Committee.
November 2003	Trustee performs its first semi-annual groundwater monitoring event.
March 3, 2004	Trustee hires URS Corporation to perform OU2 remedial action construction and natural attenuation monitoring.
June 14, 2004	URS Corporation began construction of OU2 remedy, installed five new monitoring wells and collected first sampling round of quarterly natural attenuation monitoring.
June 2004	IDEM issued a fact sheet to announce beginning of OU2 remedy construction
April 13, 2005	IDEM staff and trustee provided site status report to Fulton County Hazardous Substance Committee
January 18, 2006	IDEM staff provided site status report to Fulton County Hazardous Substance Committee

Guide to Acronyms

AO	Agreed Order
BRA	Baseline Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation and Liabilities Act
U.S. EPA	U.S. Environmental Protection Agency
EWC	Environmental Waste Control
FCL	Four County Landfill State Cleanup Site
IDEM	Indiana Department of Environmental Management
ISBH	Indiana State Board of Health
LTGWMP	Long Term Groundwater Monitoring Plan
MCLs	Maximum Contaminant Levels
NCP	National Contingency Plan
O&M	Operations and Maintenance
OUs	Operable Units
PRPs	Potentially Responsible Parties
RA	Remedial Action
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RD/RA	Remedial Design/Remedial Action
RI	Remedial Investigation
RI/FS	Remedial Investigation/ Feasibility Study
ROD	Record of Decision
STOP	Supporters To Oppose Pollution
SVOCs	Semi-Volatile Organic Compounds
TCE	Trichloroethylene
VOCs	Volatile Organic Compounds